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January 22, 1990

Dave Haldeman
Environmental Engineer
Scott Paper Company
Front and Avenue of the States
Chester, PA 19013

RE: Backhoe Trench Investigation

Dear Dave:

This letter will report the findings of the trench investigation conducted January 17, 1990, at the Scott Paper Company, Chester, Pennsylvania. The preliminary investigation was conducted to characterize the area of fill around the No. 6 oil tank, and to evaluate the extent of contamination in the area. The trench investigation was conducted in response to the recurring discharges of oil from the bulkhead area to the lagoon. To date, the source of this oil has not been determined. The oil is being confined to the lagoon by absorbent booms to prevent releases to the Delaware River.

The trenching investigation was conducted by Guardian Environmental Services, Inc. of Bear, Delaware. The trenches were located on the north side of the No. 6 fuel oil tank, and extended the length of the lagoon's bulkhead (See Figure 1). Soil was excavated to depths just below the ground water level, so the water surface could be observed. A total of four trenches were dug, under the direction and supervision of Dave Haldeman and R.D. Miller, both of the Scott Paper Company.

Trench 1

Trench 1 was located six feet north of the number 6 fuel oil tank (see Figure 1). The soils are described as follows:

Depth (Feet)	
0 to 0.5	- Macadam base and limestone cobbles.
0.5 to 2.0	- Moist, black sandy gravel, slight oil odor, believed to be coal and/or ash material.
2.0 to 11 (Bottom)	- Moist, tan brown sandy gravel, oil odor. Water first encountered at 9.5 feet.

A six inch steel pipe was discovered at a depth of six feet. The origin of the pipe and its contents (if any) were unknown. Horizontal timbers of the low deck were unearthed at a depth of nine feet, on the northwest wall of the trench. A retaining wall was built beside the deck, leaving a large void space under the deck. This void space was approximately four feet deep.

As the retaining wall was excavated, water and oil flowed into the trench from the void space. A sample of the upper portion of the water and oil was collected with a graduated, bottom-feed bailer. An approximately 1/4- to 3/8-inch thick, floating immiscible layer of oil was observed on the water surface. This sample was submitted to a laboratory for qualitative gas chromatograph analysis (GC fingerprint) to determine the nature of the fuel oil (e.g, No. 2, No. 4, No. 6 fuel oil).

Trench 2

Trench 2 was located west of a storm drain just off the west corner of the lagoon (see Figure 1). The soils are described as follows:

Depth (Feet)	
0 to 0.5	- Macadam and tan gravel base.
0.5 to 1.5	- Black sand and gravel (coal), slight oil odor.
1.5 to 5.0 (Deck)	- Moist tan sand and gravel, concrete rubble.
8.0 to 9.0 (Bottom)	- Wet tan gray silty sediments.

Wood decking was encountered at a depth of five feet. Void space underneath the deck was approximately 2 feet. Part of the wood deck was broken to allow access to the water. An immiscible layer of oil floated on the surface of the water. A graduated, bottom-feed bailer was used to obtain a sample of the water and oil. Approximately 1/4-inch thick immiscible layer was observed. Further excavation disturbed this layer and additional sampling was deemed impractical, due to the lack of enough accumulated oil. Wave action during the rising of the tide suggested a direct water flow from the lagoon. Plant personnel indicated that this wooden deck travels the length of the lagoon, and may extent southward along the Delaware River.

Trench 3

Trench 3 was located southeast of the number 6 fuel oil tank, just west of a concrete transformer pad (see Figure 1). The soil was described as follows:

Depth (Feet)	
0 to 1.0	- Crushed concrete, grayish tan sand and gravel.
1.0 to 2.0	- Dark gray sand and gravel.
2.0 to 6.0	- Moist, orange tan silty sand and gravel. No odor throughout. Concrete slab encountered at the base of the trench.

Ground water was not encountered in this trench due to the impenetrable concrete slab. Site personnel believe this slab supports the No. 6 fuel oil tank and extends to the low deck along the Delaware River.

Trench 4

Trench 4 was also located east of the oil tank, just north of Trench 3. The soils in this trench were described as follows:

Depth (Feet)	
0 to 0.5	- Dark tan sandy gravel.
0.5 to 2.0	- Dark gray sandy gravel.
2.0 to 9.5 (Bottom)	- Grayish tan sandy gravel. Soil at the bottom of the pit had a visible sheen.

This trench was dug to ground water. There were no void spaces encountered. A very slight oil odor was noted at the top of the water table, but there was no observable immiscible oil layer present. Soil excavated from nine feet had a visible sheen.

Oil Sample from Lagoon

Absorbent booms used in the containment of the oil release are retrieved and replaced daily. The soiled booms are stored for disposal in 55-gallon drums. Oil was wrung from one of the booms to be submitted to a laboratory for qualitative gas chromatograph analysis (GC fingerprint). The results of this analysis will be used to compare with results of the Trench 1 sample, to identify whether these oils are of the same origin.

Summary

Backhoe trenches were dug in an effort to delineate the area of oil contamination around the No. 6 fuel oil tank and to identify the source of leakage. Based on the findings of the excavations and discussions with site personnel, it is believed a wooden deck structure extends from the northwest corner of the lagoon to the southwest corner (where the lagoon meets the Delaware River). A void space below this deck has accumulated oil, and releases it to the lagoon during low tide. There appears to be direct water flow between the lagoon and the void space below the deck. A trench dug between the deck and the above-ground tank (Trench No.4, near the transformer pad) revealed very little immiscible oil contamination at the surface of the ground water.

The source of the oil contamination was not identified during the investigation. Oil obtained from the top of the water surface from Trench 1 and the lagoon were submitted for laboratory qualitative analysis and identification. The results of these analyses may indicate the contaminant source(s). A supplementary report will be submitted upon receipt and evaluation of the analytical results.

If you have any questions or need additional information, feel free to call me.

Sincerely,

Daniel E Ressler/ns

Daniel E. Ressler
Soil Scientist

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